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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

MENON, KRISHNAN S

ART UNIT

PAPER NUMBER

1723

DATE MAILED: 12/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/986,446

Applicant(s)

SCHNEIDER ET AL.

Examiner

Krishnan S Menon

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7/25/03. 6) ☐ Other:

DETAILED ACTION

Claims 12-24 are pending.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 12, 13, 19 and 24 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by JP 07-207,357.

JP teaches a device for filtering and adding grain refining material to metal melt comprising a first filter, a grain refining material feed downstream of the first filter and a second filter downstream of the first filter as in claim 12 (see abstract and specification)

First filter can be a cake filter as in claim 13 (see specification) and the second filter is of a porous filter medium as in claim 19.

JP teaches a method of filtering, by filtering through a first filter, adding a grain refiner and then filtering through a second filter as in claim 24 (see abstract and specification)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim 20-21 and 22(12,13,19-21) {Claims 22 as it depends from claims 12, 13, and 19-21} and 23 (12,13,19-21) are rejected under 35 U.S.C. 103(a) as being unpatentable over JP(357) in view of Gesing et al (US 4,790,873).

JP teaches all the limitations of claim 12. Instant claims add further limitations which are not taught by JP, but taught by Gesing as follows:

Second filter is a deep bed filter as in claim 20, and is loosely filled as in claim 21 (see fig 7-9). Gesing teaches electrically heated filter as in claims 22(12,13, 19-21) and 23 (12,13, 19-21) (col 7 lines 7-10). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Gesing in the teaching of JP for the device for a metal melt because it would help trap and hold metal wettable inclusions, inline treatment, and for continuous operation (Gesing col 1 lines 7-19, col 4 lines 16-25, col 7 lines 1-10)

2. Claims 14-17, 22 (14-17) and 23 (14-17) are rejected under 35 U.S.C. 103(a) as being unpatentable over JP (357) in view of Gesing et al (US 4,790,870) as in claim 12 above and further in view of Dore (US 4,113,241).

Claims 14-17 add further limitations of first filter being a ceramic foam plate, plate thickness and that it is being sintered. Dore teaches a sintered

ceramic foam filter plate for metal melt filtration (abstract, col 6 lines 10-20). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Dore in the teaching of JP(357) in view of Gesing for more efficient filtration (Dore col 6 lines 21-34).

Gesing in view of Dore is not specific on the thicknesses of the filter elements as in instant claims 15 and 16 . However, it would be obvious to one of ordinary skill in the art at the time of invention to provide sufficient thickness to have enough strength without compromising on pressure drop. [Discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art. In re Boesch and Slaney, 205 USPQ 215 (CCPA 1980); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Aller, 42 CCPA 824, 220 F.2d 454, 105 USPQ 233 (1955)].

Gesing teaches electrically heated filter as in claims 22(14-17) and 23 (14-17) (col 7 lines 7-10).

3. Claims 18, 22 (18) and 23 (18) are rejected under 35 U.S.C. 103(a) as being unpatentable over JP(357) in view of Gesing et al (US 4,790,870) as in claim 12 above and further in view of Walker (US4,834,876).

JP in view of Gesing teaches electrically heated filter (Gesing: col 7 lines 7-10) as in claims 22 (18) and 23 (18), but does not teach a CVD deposited material on the filters as in instant claim 18. Walker (876) teaches heated filter elements for metal melt filtration, with CVD metal deposition for resistance heating of the element (col 2 lines 12-15). It would be obvious to one of ordinary

skill in the art at the time of invention to use the teachings of Walker (876) to configure the filter elements to be heated for the purpose of heating the filters as taught by Gesing.

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

This action is made non-final due to the new grounds for rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S Menon whose telephone number is 703-305-5999. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L Walker can be reached on 703-308-0457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Krishnan Menon
Patent Examiner


W. L. WALKER
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